Los Alamos
NATIONAL LABORATORY

MIRROR

2nd Quarter 2004

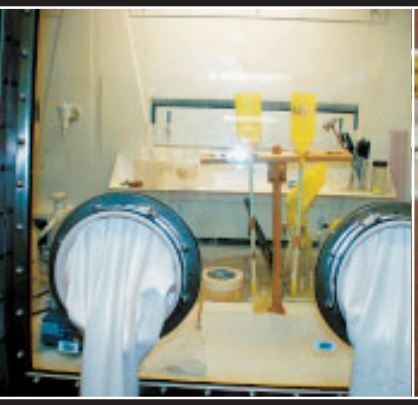
Performance Surety Division

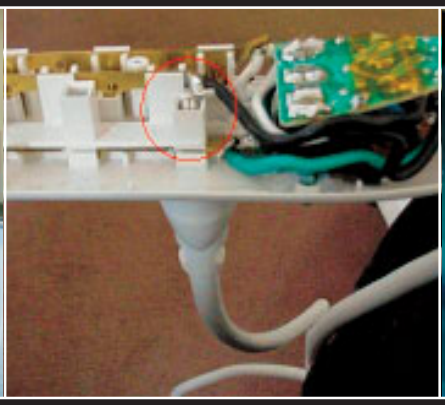
LANL MIRROR:

Reflecting Incidents, Actions, & Lessons at Los Alamos National Laboratory

Safety Data:
MWA REPORT

p. 16





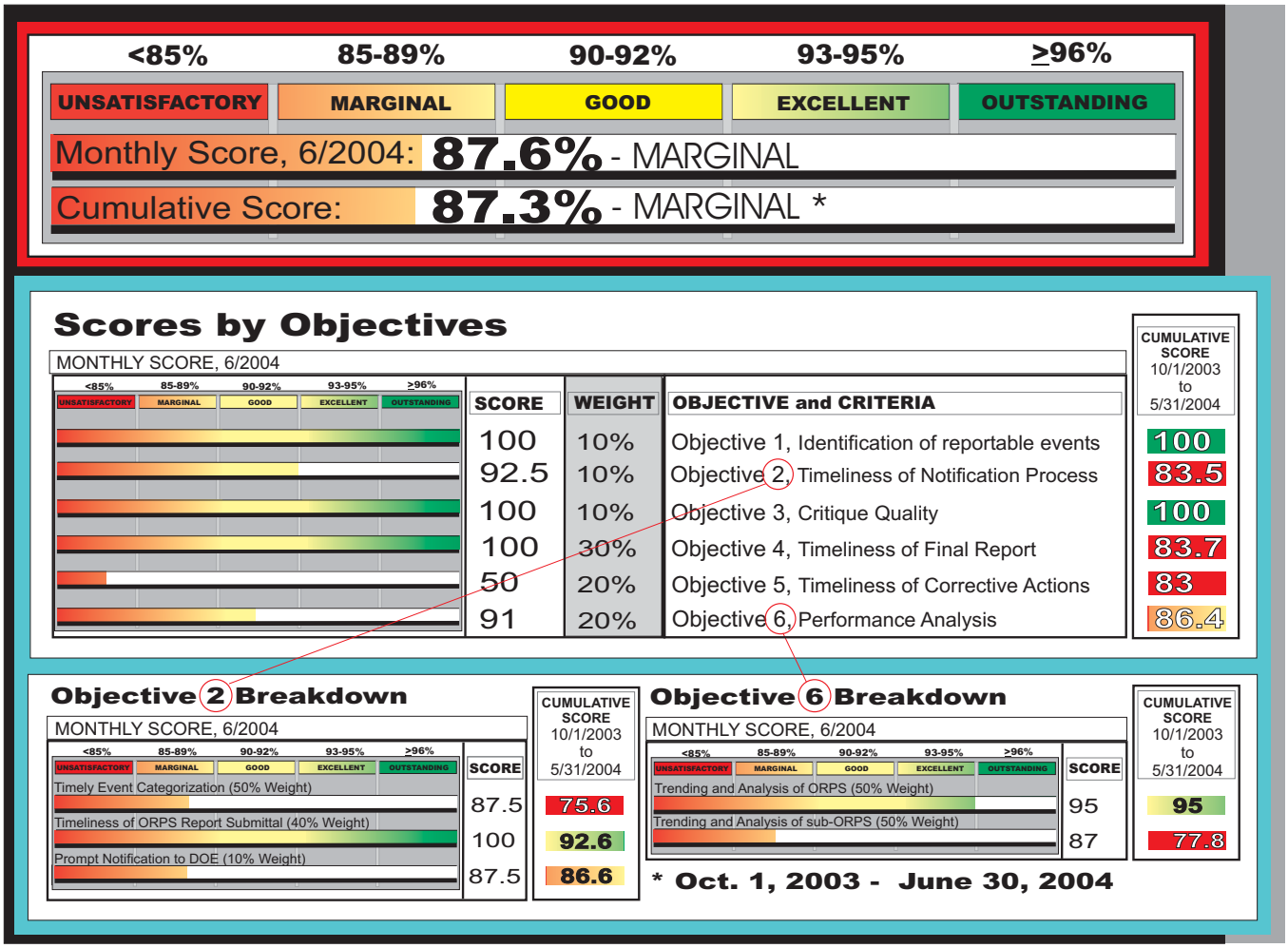
IN THIS ISSUE:

The Quarter in Numbers:

During this period, LANL experienced 24 new events that were reportable according to DOE Order 231.1A "Environment, Safety, and Health Reporting." The 24 new occurrences were grouped in the following categories:

- **13 Safety Basis events**
- **3 Property/Equipment Problem events**
- **3 Personnel Safety events**
- **1 Environmental event**
- **1 Safety SSC Problem event**
- **2 Packaging and Transportation events**
- **1 Fire Protection event**

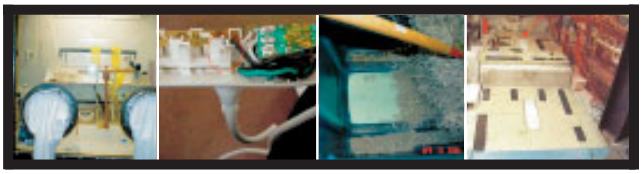
LANL Occurrence Reporting Performance, **June 2004**



APPENDIX F PERFORMANCE MEASURES: The graphic above shows results of the University of California Appendix F Performance Measures for the LANL Occurrence Reporting program through June 30, 2004. The Laboratory's Occurrence Reporting program performance is reviewed monthly with the Department of Energy's Los Alamos Site Office (LASO). The latest monthly and year-to-date results are published quarterly in the "Mirror."

ABOUT THE COVER

The photographs on the cover were taken at occurrence sites throughout the Laboratory. The photographs and a corresponding description of the occurrences can be found on the following pages: (from left) Page 12, Page 5, Page 7 and Page 19.



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No matter where you are in the DOE Complex, there are lessons to be learned from one another. If you have lessons of interest or situations that were mitigated or prevented by using the lessons learned, please let us know. Contact lcollier@lanl.gov or lujan_clarence_e@lanl.gov.

For more lessons learned information and resources, the LANL Lessons Learned Resources page is located at *http://www.lanl.gov/projects/lessons_learned/*. This provides access to the LANL lessons learned database and to other resources throughout the DOE complex.

Contact Linda Collier at 667-0604 to request hard copy distribution of the LANL Mirror. LANL workers with Smartcards can access summaries of all LANL occurrences online at http://orps.lanl.gov/orps/asp/. The LANL Mirror is available online at mirror.lanl.gov or *http://www.ps.lanl.gov/ps_7/mirror.shtml*.

Summaries of New LANL Occurrences

2ND QUARTER - 2004

During this period, Los Alamos National Laboratory experienced 24 new events that were reportable according to DOE Order 231.1A "Environment, Safety, and Health Reporting." These 24 events are contained in 24 occurrence reports, which are grouped into 7 categories: Safety Basis (13), Property/Equipment Problem (3), Personnel Safety (3), Environmental (1), Safety SSC Problem (1), Packaging and Transportation (2) and Fire Protection (1). The following is a description of each category and a summary of each associated report. (*NOTE*: *The investigations for many of these new occurrences have not yet been completed. Consequently, the summaries generally do not include the causes and corrective actions for the event and associated lessons learned. This information is included in final occurrence reports.)*

SAFETY BASIS

This category contains events that involve actual or potential compromises of a facility's safety basis (SB). These events include TSR violations, non-compliances with a JCO, BIO, or DSA, and unreviewed safety questions for existing conditions.

Unreviewed Safety Issue at DARHT and PHERMEX

ALO-LA-LANL-FIRNGHELAB-2004-0002

On March 17, 2004, Dynamic Experimentation Division (DX) declared a potentially inadequate safety analysis (PISA) after confirming that radioactive contamination areas were created at the DARHT and PHERMEX facilities following certain explosives experiments. An investigation determined that the issue constituted a positive unreviewed safety issue determination (USID). In October 2003 DX had begun to use foam for mitigating the dispersal of beryllium from explosives experiments. While the foam achieved its intended goal, it also concentrated depleted uranium (DU) in a small area of each firing site. These areas were surveyed and posted as contamination areas as required by 10 CFR 835 until decontamination could be performed. The postings were inconsistent with the facility safety basis. The primary ISM cause of this occurrence was a failure of Step 2, Analyze the Hazards. Facility personnel discovered radiological conditions that yielded new information requiring entry into the PISA process for resolution under the facility USID program.

Noncompliance with an IP Requirement

ALO-LA-LANL-MATWAREHS-2004-0001

On April 1, 2004, the Packaging and Transportation Group (SUP-5) acting group leader identified a violation of the implementation plan (IP) requirement for a new transportation safety document (TSD) and technical safety requirements (TSR) document. SUP-5 failed to revise and complete the implementation of selected safety management programs (SMPs) by the date specified in the IP. The TSD and TSR IP are safety basis documents, and the failure to comply with an approved commitment date in the IP is considered to be a noncompliance with a hazard control specified in the safety basis. The apparent cause of this occurrence was inadequate work planning that resulted in insufficient time and manpower being allotted to the development of safety management programs. Corrective Actions: (1) have SUP-5 convene one or more SUP Division meetings for planning the implementation of safety management programs covering packaging and transportation activities and identifying a realistic resource-loaded schedule.

Positive USQ Identified

ALO-LA-LANL-TA55-2004-0001

On April 6, 2004, at TA-55, the operations manager was informed that unstable chemicals found in a glovebox in Building 4, Room 208, constituted a positive unreviewed safety question (USQ). About 3 grams of crystallized silver perchlorate had been found in the glovebox. A USQD was conducted to review the specifications for explosive chemicals in the design safety analysis (DSA). The amount of silver perchlorate was equivalent to .27 grams of TNT, and the consequences of blast overpressurization were calculated to be 2.2 pounds per square inch gauge (psig). The DSA identified the consequences of overpressurization but did not identify dry perchlorate salts as an initiator.

Positive USQD Identified

ALO-LA-LANL-HEMACHPRES-2004-0001

On April 22, 2004, a positive unreviewed safety question determination (USQD) was identified for TA-8, Building 23, the Radiography Facility. The facility fire alarm system does not comply with the NFPA 72, the National Fire Alarm Code. Since the justification for continued operation (JCO) for the Radiography Facility was written with the understanding that the facility fire alarm system was compliant with NFPA 72, the Applied Technologies Group (ESA-AET) initiated a backward-looking USQD, the outcome of which was positive.

Identification of USQD

ALO-LA-LANL-TA55-2004-0002

On April 30, the Nuclear Materials Technology (NMT) Operations Manager was informed that a positive USQD had been identified. The appropriate controls were implemented. Details of this occurrence are classified.

Declaration of PISA at CMR

ALO-LA-LANL-CMR-2004-0003

On May 5, 2004, the CMR facility operations manager determined that a discrepancy found in the facility basis for interim operation (BIO) could impact the facility's safety analysis. The BIO assumes that shipments of gasoline and diesel fuel will be limited to less than 200 gallons and high explosives will not be shipped on the road immediately east of the facility. As a result, certain accident scenarios were not adequately analyzed.

Positive USQD Identified

ALO-LA-LANL-HEMACHPRES-2004-0002

On May 5, 2004, ESA-AET identified a positive USQD concerning deficiencies in the lightning protection system at TA-8, Building 23. The deficiencies included inadequate bonding and grounding of cables and roof access ladders, incorrect wire sizes, and incorrect spacing of air terminals on the building roof. The Laboratory lightning protection engineer indicated that the lightning system is functional but does not comply with National Fire Protection Association (NFPA) 780.

Declaration of Potentially Inadequate Safety Analysis (PISA)

ALO-LA-LANL-TA55-2004-0003

On May 11, 2004, the TA-55 Operations Manager was notified by the Nuclear Materials Technology Authorization Basis Group (NMT-14) that a formerly identified negative USQD could be positive. The negative USQD concerned the introduction of a bench-scale plutonium-238 scrap recovery operation in Building 4, Room 201. The negative USQD was performed in 1998. Subsequently, during the development of a hazard analysis for the full-scale scrap recovery line, several TSR-level controls were identified, which called into question the validity of the previous USQD. The start of the full-scale scrap recovery operation has been delayed.

Technical Safety Requirement Violated

ALO-LA-LANL-TA55-2004-0004

On May 13, 2004, at TA-55, the Operations Manager declared a technical safety requirement (TSR) violation. The TSR violation was due to a miscommunication that led to a limiting condition of operation (LCO) being exited prematurely. On May 8, 2004, at 1102, FWO personnel notified the Operations Center that they were ready to commence replacement of the magnehelic gauge on the TA-55 standby bleed-off plenum. Operations Center personnel entered the applicable LCO in accordance with facility TSRs. At 1226, the Operations Center was notified that the magnehelic had been installed and the work was complete. The Operations Center personnel exited the LCO. A subsequent investigation revealed that the readings between the old and new magnehelic gauges deviated by more than 10%, that the recalibration was not performed in accordance with procedure, and that the LCO should not have been exited.

Positive Unreviewed Safety Question Determination (USQD) Identified at TA-18

ALO-LA-LANL-TA18-2004-0001

On May 14, 2004, the Operations Manager for TA-18 determined that the safety analysis at TA-18 was not adequate and that a positive USQD existed. The appropriate interim compensatory actions were implemented. Details of this occurrence are classified.

Missed Surveillance Results in TSR Violation

ALO-LA-LANL-TRITFACILS-2004-0002

On May 18, 2004, at TA-16, Building 205, Room 110, the Operations Manager declared a TSR violation after learning a monthly inspection of an uninterruptible power supply (UPS) had not been completed within the required time frame. The inspection was due by May 17, 2004, and was actually completed on May 18, 2004. Tritium Science and Engineering Group (ESA-TSE) personnel subsequently determined that the inspection had been performed one day late. A misinterpretation of the WETF surveillance checklist led to missing the actual required date. Corrective Actions: (1) have ESA-TSE issue a standing order detailing additional requirement for ensuring surveillance checks on TSR equipment are performed as required and (2) have ESA-TSE complete installation of an automated software system that tracks and displays all TSR due dates on a daily basis.

Potential Inadequate Safety Analysis Concerning LANL's Welding Program

ALO-LA-LANL-LANL-2004-0006

On April 6, 2004, LANL site management determined that a PISA condition exists regarding the lack of a site-wide welding inspection and qualification program. A review raised suspicions in several welding-related issues, including potential welding operations by unqualified/uncertified personnel, work performed to unqualified welding processes/procedures, work inspections not in accordance with governing codes/consensus standards, and weld filler material procurement issues. Because of the breadth of these potential quality assurance issues, Laboratory management will coordinate development of a site-wide USQ evaluation and determine an appropriate path forward.

Facility Did Not Properly Justify the Use of TSR Surveillance Grace Period

ALO-LA-LANL-TA18-2004-0002

On May 27, 2004, the TA-18 facility operations manager (FOM) determined that facility personnel failed to formally document the justification for completing a TSR surveillance after the prescribed frequency had elapsed, but before the grace period had expired. The facility's documented safety analysis requires a formal written justification for having to enter the grace period. The primary ISM failure of this occurrence involved Step 3, Develop and Implement Controls. Facility personnel did not properly implement a new requirement incorporated into a revised safety basis document. The requirement to justify and document the need for entering a surveillance grace period was added to the facility safety

basis documentation several years ago. Facility personnel failed to detect the modification, and the requirement was never implemented. Corrective Actions: (1) revise the plan-of-the-day procedure to include tracking of TSR surveillance due dates, (2) revise the generic TSR surveillance procedure to ensure TSR surveillances are either completed on time or the due date is properly extended and a justification is formally documented, (3) train affected personnel on the revised procedures, and (4) implement a web-based TSR equipment status and surveillance tracking system.

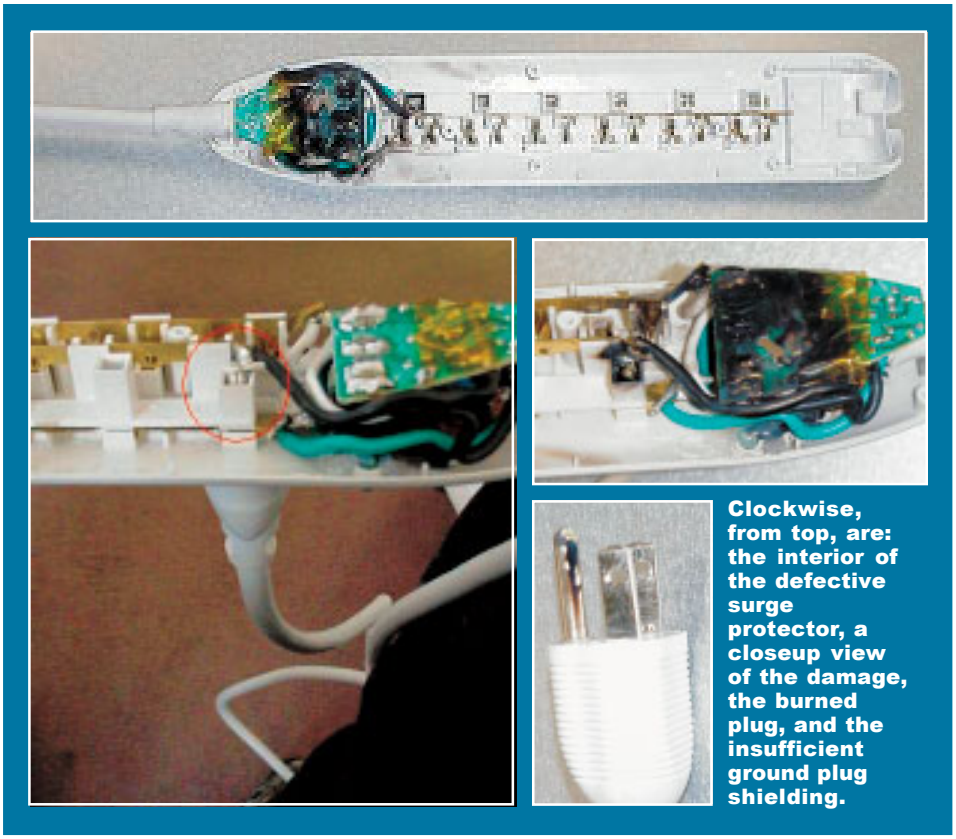
PROPERTY/EQUIPMENT PROBLEM

This category contains events that involve actual, or the potential for, significant property or equipment damage. These events include discovery of counterfeit equipment.

Defective Surge Protector Discovered

ALO-LA-LANL-ESHSUPT-2004-0003

On May 7, 2004, at TA-53, Building 1, Room B113, as a Technical Mission Support Group (LANSCE-10) employee was attempting to plug a computer monitor power cord into a surge protector, the device sparked and caused an electrical arc and loud popping noise. At the time, the surge protector was energized and plugged into a wall receptacle. The surge protector was a Stanley 6-outlet SurgeProTM Power Strip with a 6-foot power cord (Model STS164) manufactured by Belkin Components. The affected employee reported muscle soreness in her right arm. Her symptoms were most likely the result of reactive motion induced by the arc flash and not by an electrical shock. The causes of this occurrence were defective or failed part and inadequate design output scope. After the event, the LANSCE electrical safety officer inspected the surge protector and another one of the same make and model. Both had similar internal wiring deficiencies and insufficient ground plug shielding. Corrective Actions: (1) evaluate existing surge protectors in the LANSCE training office, (2) issue a LANL-wide alert on the defective surge protector, and (3) research LANL procurement requirements for surge protectors.



Clockwise, from top, are: the interior of the defective surge protector, a closeup view of the damage, the burned plug, and the insufficient ground plug shielding.

Suspect Bolts Discovered at Isotope Production Facility

ALO-LA-LANL-ESHSUPT-2004-0004

On May 13, 2004, while touring the Isotope Production Facility (IPF) at TA-53, Building 984, the LANL suspect/counterfeit (S/CI) point of contact (POC) identified two suspect SAE grade 5 bolts on a stainless steel flange. The flange is part of the vacuum piping system, which is not designated as a safety-significant system. The two bolts had three radiating lines indicating SAE grade 5 bolts and were stamped with the KS manufacturing marking. Based on these characteristics, the bolts are considered suspect according to the DOE suspect/counterfeit parts headmark list. The causes of this occurrence were an incorrect assumption based on a faulty correlation and a poorly defined management policy. The IPF was constructed over the past two and a half years. According to LANSCE management, the bolts were procured from a just-in-time vendor in Fall 2002 and installed by LANSCE personnel; however, the technician who procured the bolts is no longer employed at LANSCE and the procurement documentation was not available. LANSCE management speculated that the installers ran out of the stainless steel bolts, used what was readily available to complete the installation, and were unaware of the S/CI issues. Corrective Actions: (1) walk down all beam line and water systems installed at IPF, (2) replace the currently identified

suspect bolts and any others identified during the walkdown, (3) provide a copy of the DOE suspect headmark listing to LANSCE-2, (4) review the LANL S/CI training documentation with LANSCE mechanical personnel, and (5) have LANSCE vacuum and mechanical personnel attend a formal LANL S/CI training course.

Two Defective Glovebox Tritium Ion Chambers Discovered in WETF

ALO-LA-LANL-TRITFACILS-2004-0003

During investigation into a tritium glovebox leak that occurred on April 1, 2004, personnel discovered the source of the leak to be in an Overhoff Perforated Ion Chamber/Electrometer Assembly located on the loadout glovebox at TA-16. The ion chamber serves as a glovebox tritium monitor. One of the bolt holes penetrated into a chamber feedthrough and compromised the seal, which serves as a confinement of the glovebox atmosphere. A review of the design specifications for the ion chamber showed the bolt hole was out of position and penetrated the seal. A second ion chamber of the same make and model, used as a spare, was inspected and found to be in the same condition. The technicians determined the ion chambers did not meet the design specifications and considered the two ion chambers to be defective. The leak on one of the chambers was sealed with epoxy and it showed no further leakage.

PERSONNEL SAFETY

This category contains events that involve either actual, or the potential for, injury from electric shock, pressurized systems, hoisting and rigging, hazardous material exposure, or other OSHA-related hazards.

Employees Experience Eye Irritation

ALO-LA-LANL-CMR-2004-0002

On April 28, 2004, in the basement of the CMR facility, five employees suffered eye irritation from exposure to gases evolved during battery charging. Two facility ES&H personnel were checking a gas line in the Wing 1 basement corridor when they discovered a forklift plugged into a battery charger that had been informally tagged out 15 months earlier. One of the employees, an industrial hygienist, noticed a strong odor in the area and used a gas meter to monitor the air quality. The meter indicated acceptable ranges, but it did not measure sulfur dioxide, a decomposition product from battery overcharging. The employees unplugged the forklift from the charger, and one of the employees began to experience pain in her eyes. The CMR emergency response team responded and flushed the employee's eyes. Other employees working in the vicinity of the charger also reported eye irritation.

Glass Diffuser Falls From Ceiling

ALO-LA-LANL-FIRNGHELAB-2004-0003

On April 27, 2004, at TA-9, Building 21, a chemist narrowly missed injury when a glass diffuser panel fell 12 feet, missing her by 3 feet and shattering glass over about 30 square feet of the laboratory floor. The diffuser was one of four panels of a 4-foot fluorescent ceiling lamp assembly originally installed in 1952. At the time of the event, the chemist had been transferring a reactor vessel containing sensitive energetic explosives precursor material from one laboratory hood to the other. The cause identified for this event was an end-of-life failure. An examination of the light fixture indicates that the only way that the diffuser was able to fall was if the glass cracked and the diffuser separated into two or more pieces. The facility has no other experience of failed glass diffusers. Corrective Actions: (1) inspect all similar light fixtures in the facility for cracked glass diffusers, and replace as necessary, and (2) review the relamping procedure used for FMU-5 to determine if it is appropriate to add an inspection of glass diffusers to the work instructions.

Fatality at DOE Leased Facility During Lunchtime Basketball Game

ALO-LA-LANL-ADOADMIN-2004-0004

On June 10, 2004, a LANL employee collapsed while playing a noontime pick-up basketball game at one of the Laboratory's leased facilities. The Los Alamos Fire Department (LAFD) was dispatched and arrived at the scene, began emergency treatment, and transported the employee to Los Alamos Medical Center (LAMC). The LAMC Emergency Response medical staff continued emergency treatment on the employee, but were unsuccessful in reviving him. He was later pronounced dead.

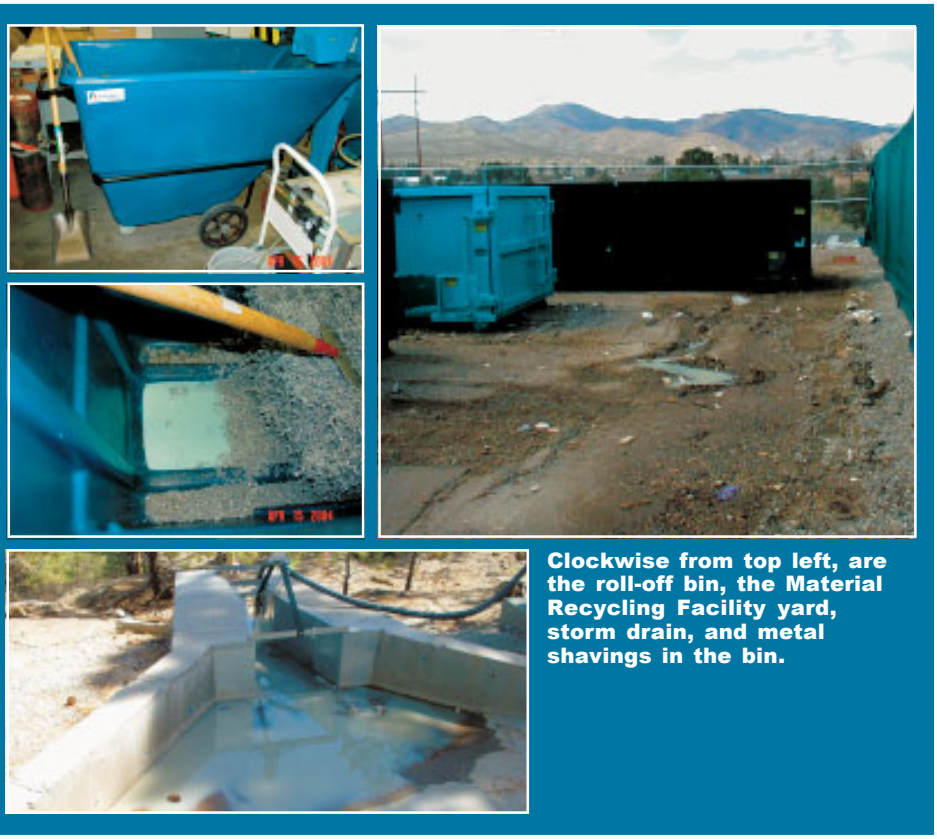
ENVIRONMENTAL

This category contains events that involve actual, or potential, releases to the environment of radioactive material, hazardous substances, and regulated pollutants. The category also includes non-compliances with state or federal environmental agreements.

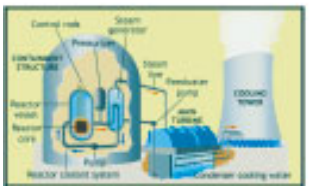
Discharge at Material Recycling Facility

ALO-LA-LANL-ADOADMIN-2004-0003

On April 14, 2004, at TA-60, Building 85, the Material Recycling Facility (MRF), while an Ace Metals driver was loading a 15-yard roll-off bin onto a transport vehicle, about 300 gallons of storm water and cutting oil discharged onto the soil and storm drain. The bin came from TA-50, Building 54. One causal factor associated with this occurrence was that the check of work was less than adequate in that the driver failed to observe the liquid in the bin. Another cause was that job performance standards were not adequately defined. An Ace Metal representative stated that metal shavings cannot be recycled when they are wet. Storm water collected in the bin because it was uncovered and was stored outside the MRF. Corrective Actions: (1) review the metal shavings recycling process and develop alternatives for preventing entry of water and (2) sample the liquid remaining in the bin and analyze it for total volatile organic compounds (VOCs), total semi-volatile organic compounds (SVOCs), and total metals.



Clockwise from top left, are the roll-off bin, the Material Recycling Facility yard, storm drain, and metal shavings in the bin.



SAFETY SSC PROBLEMS

This category contains events that involve the activation of a safety structure, system, or component (SSC) in response to an actual unsafe condition. This category also includes events involving the degradation or failure of a safety SSC that affects normal operations.

Tritium Leak Rate Exceeds Safety Analysis Specifications

ALO-LA-LANL-TRITFACILS-2004-0001

On March 11, 2004, at the Weapons Engineering Tritium Facility (TA-16-205), Room 114, a tritium-handling glovebox, designated as safety significant, suffered a leak of tritium at a rate greater than that specified in the DSA. Before the incident, on March 10, 2004, the Tritium Science Engineering Group (ESA-TSE) personnel had moved a tritium container to a port on the load-in glovebox. Leak tests were performed satisfactorily on the lines connecting the primary container to the WETF process and the secondary container to the glovebox. Both valves isolating the container from the process were closed. The following day, ESA-TSE personnel opened the valves and sampled the tritium container. Subsequently, one of the isolation valves was being shut when the glovebox tritium alarm sounded. Tritium levels in Room 114 reached approximately 50 microcuries per cubic meter. A bad seal around a glove band was the likely source of the leakage from the glovebox to the room. Over the next several days, ESA-TSE staff gathered more data and determined that the leak rate from the glovebox exceeded the DSA leak rate requirement.

PACKAGING AND TRANSPORTATION

This category contains events that involve noncompliances with Department of Transportation regulations. These events include releases of regulated materials that occur during transportation activities.

PISA Declared for Type A Designated Packaging

ALO-LA-LANL-LANL-2004-0007

On April 12, 2004, the Safety Basis (PS-4) office leader determined that Type A designated packaging purchased by the Laboratory and used for certain quantities and types of fissile content did not meet Department of Transportation (DOT) Type A requirements. The failure also constituted a PISA. Laboratory procurement personnel determined the manufacturer did not conduct the fissile drop test.

Transportainers Do Not Meet Requirements

ALO-LA-LANL-MATWAREHS-2004-0003

During an assessment on May 3, 2004, LANL site personnel determined that required tie-down tracks were not installed in the transportainers that are used to transport onsite radioactive materials at the Laboratory. Following this discovery, management removed the transportainers from service, pending development of a Design Change Package (DCP). During development of the DCP, site personnel found that the transportainers also did not meet other requirements associated with the Laboratory's Transportation Safety Documentation requirements. Subsequently, management directed that the transportainers be taken out of service, pending further evaluation. Drum transfers are continuing at the Laboratory with the usage of two panel vans instead of a single transportainer.

FIRE PROTECTION

This category contains events that involve activation or failures of fire alarm or fire suppression systems.

Potential Concerns Result from Grass Fire on Otowi Roof

ALO-LA-LANL-OTOWI-2004-0001

A small grass fire occurred June 2, 2004 on the roof of Building 261 (Otowi Building). The fire was contained within a 15-foot by 30-foot area that was surrounded by a concrete retaining wall, and self-extinguished before a fire extinguisher could be utilized. Site Fire Department personnel responded to the scene, conducted an investigation, and found several cigarette butts that were discarded in the grass near the fire location. The grass area has a sprinkler system, but the water line that supplies the sprinkler system was shut off to repair a leak, so the grass had not been watered for several days, resulting in very dry grass. Because the fire was quickly extinguished, the building was not evacuated. Management will expedite a repair of the water line for the roof's sprinkler system. Upon repair, the sprinkler system will be set up to activate twice a day. In addition, the location of existing smoking areas will be re-evaluated and consolidated into more manageable areas.

DOE-Complex Occurrences

2ND QUARTER - 2004

The following is a collection of incident summary briefs that were published in the last quarter in the DOE Office of Environment, Safety and Health Corporate Performance Assessment's "Operational Experience Summary." The Operational Experience Summary is intended to promote safety throughout the DOE complex by encouraging the exchange of lessons-learned information among DOE facilities. The following reports are only summaries of articles contained in the publication, which are available online at http://www.eh.doe.gov/paa. New subscribers can sign up at: http://www.eh.doe.gov/paa/subscribe.html. (ES&H Information Center, 800-473-4375)

DOE EH Publishes "Just-In-Time" Reports

The DOE Office of Environment, Safety and Health recently began publishing a series of "Just-In-Time" reports that are available online at http://tis.eh.doe.gov/paa/jit.html. These two-page reports inform work planners and workers about specific safety issues related to work they are about to perform. The format of the Just-In-Time reports was adapted from the highly successful format used by the Institute of Nuclear Power Operations (INPO). Each report presents brief examples of problems and mistakes actually encountered in reported cases, then presents points to consider to help avoid such pitfalls. The following is a listing of the first installment of "Just-In-Time" Reports, which were developed as part of the 2004 Electrical Safety Campaign:

- Excavation Incidents - Deficiencies in identification and control of electrical hazards during excavation have resulted in hazardous working conditions.
- Blind Penetration Incidents - Deficiencies in work planning and hazards identification have resulted in electrical near misses when performing blind penetrations and core drilling.
- Energized Electrical Work - Working near energized circuits has resulted in electrical near misses.
- Electrical Demolition Activities - Deficiencies in control and identification of electrical hazards during facility demolition have resulted in hazardous working conditions.
- Electrical Wiring Errors - Electrical wiring mistakes have resulted in electrical shocks and near misses.
- Vehicles and Overhead Lines - Deficiencies in planning and use of spotters contributed to vehicles striking overhead power lines.

NOTE: Only registered ORPS users can link to the ORPS reports cited in the Just-in-Time reports. (For ORPS registration, see http://www.eh.doe.gov/oeaf/orps.html).

PERSONNEL SAFETY

Faulty Battery Charger Units Cause Electrical Potential Between CALT-8 Leak Detector Case and Ground

Richland, Hanford Site, Plutonium Finishing Plant, RL-PHMC-PFP-2004-0006

During a work activity on April 6, 2004, site personnel plugged a 110-VAC battery charging unit into a leak detector to charge the detector's newly-installed batteries. During the course of the work, the Cognizant Engineer sensed a "hair raising" sensation on his forearm. Later, a technician performed a voltage check of the leak detector's metal case and found 63-VAC across the case to ground. Upon further checking, it was discovered that the 110-VAC battery charger was the source of the voltage. The voltage measured across the charger's output connector, which should be 24-VDC, was 63-VAC instead. A new battery charging unit was installed and the case to ground potential disappeared. A routine check of other similar battery charging units found three additional faulty charger units, for a total of four (two from field use and two from spares). The four faulty charger units were taken out of service.

Personnel Error Causes Laser Eye Injuries

Berkeley National Laboratory, OAK-LBL-MSD-2003-0001

On March 14, 2003 at the University of California-Berkeley (UC-Berkeley) for Lawrence Berkeley National Laboratory (LBNL), a graduate student suffered a temporary eye injury while manipulating a power meter in the beam path of a pulsed infrared laser beam. The student, believing the alignment task was completed, was not wearing protective eyewear when a stray beam from an optic reflected in his eyes. Fortunately, the student suffered no permanent eye injury from this incident. The optic was unnecessary to the setup, and it is not known how or when it was inserted into the beam path. A pre-alignment survey would have detected this optic. Although these surveys are particularly important for a multi-user system, none was performed. Investigators determined that configuration control for the laser and optics was inconsistently applied to the multi-user system. The inserted optic was not logged into the laser use book, and the entire path of the laser beam was not enclosed. Another laser incident occurred on Sept. 9, 2003 when a Brookhaven National Laboratory graduate student attempted to align a Class IV Pulsed Alexandrite Laser and sustained injuries to both eyes (burned retinas). The student was not wearing protective eyewear and the beam was reflected into both eyes. Investigators determined the student was untrained and unqualified to perform the alignment; the laser was installed without having the Laser Safety Officer register it or perform a review; procedures and other documentation were out of date; and the department lacked a formal process for notifying the proper officials about laser acquisition.

Breezeway Collapsed During Demolition Resulting in Damage to Excavator

Ohio, Mound Plant, Sites and Grounds, OH-MB-BWO-BWO04-2004-0005

During D&D activities in a breezeway (a structure approximately 8 feet high), a near-miss occurred when an excavator operator cut two points on the south end of the breezeway roof, and it collapsed onto the excavator's cab. The cab frame was bent, the windshield was broken, and the operator sustained a minor first-aid injury to his left index finger. Work was stopped, the operator was transported to site medical, where he received first-aid.

Steel Fabrication Activities on Construction Project

Sandia National Laboratory, AL, ALO-KO-SNL-1000-2004-0001

Sandia National Laboratories management issued a written "Stop Work Order" for all steel erection activities on the MESA MicroFab Construction Project, following a February 25, 2004, near-miss event in which a 1,000-pound bundle of steel decking material fell 20 feet, and landed on a concrete deck. There were no personnel injuries. Slight damage to the material occurred along with damage to an existing wooden guard railing and slight damage to an unoccupied scissor lift. Neither the contractor nor the laboratory were notified in a timely manner, and the subcontractor immediately re-lifted the load preventing a more complete review of the event. Later, a critique was held and the subcontract employee responsible for the rigging/control of the lifted load was removed from the site. Restart of this work activity will require a formal review/approval by contractor and Laboratory management of the "re-start" requirements established in the "Stop Work Order."

Contact with Underground Electrical Utility During Drilling

Kansas City Plant, ALO-KC-AS-KCP-2004-0013

A near-miss occurred when a subcontract truck-mounted drilling rig penetrated an underground concrete duct bank and contacted a 13,800-volt cable, causing the circuit to fault. There were no personnel injuries. Subsequently, a power loss occurred at the site's Manufacturing Support Building and the East Boilerhouse. Work at the drilling site was suspended and the drilling area was secured. Site management has established a formal investigation team for follow-up and resolution.

Stop Work Order Issued for Excavated Trench with Inadequate Shoring

Oakland, Stanford University Site, Stanford Linear Accelerator Center, OAK-SU-SLAC-2004-0001

A construction near-miss occurred when a Stanford Linear Accelerator Center construction inspector observed a subcontractor employee working in an open trench that lacked adequate trench shoring. In addition, the inspector determined that the spoil pile was too close to the edge of the trench. Subsequently, the inspector ordered the work stopped, pending mitigation of the trenching hazards. Later, site personnel erected temporary barriers near the trench. A Safety Review was initiated.

Puncture Hole in Building Column from Forklift Tine

Rocky Flats, Rocky Flats Environmental Technology Site, RFO-KHLL-WSTMGTOPS-2004-0005

Several incidents across the DOE complex involving forklifts show that careless forklift operations can be hazardous and result in considerable damage, costly cleanup, and unnecessary repairs. On February 26, 2004, at the Rocky Flats Environmental Technology Site, workers noticed two holes in a metal support column in a building material storage area that were produced by the tines on a large powered industrial truck. On June 6, 2003, at the Oak Ridge Y-12 Site, a forklift, operating in a congested area, backed into and damaged an electrical transformer. The forklift operator did not look behind him and did not have a spotter to assist him. The damaged transformer was not energized at the time and had been removed from a building and placed outside in a paved parking area for use at a job site. (ORPS Report ORO-BWXT-Y12CM-2003-0001) On May 14, 2004, at the Idaho Advanced Mixed Waste Treatment Facility, an operations technician accidentally punctured a waste drum with one of the tines of his forklift while maneuvering to pick up the drum. An article in "OE Summary 2003-18" reviewed forklift evetns reported in ORPS during 2003. Seventeen percent of these events involved hitting obstructions.

FIRE PROTECTION

Declaration of Operational Emergency Alert-Star: Fire Department Response to Report of Smoke

Rocky Flats, Rocky Flats Environmental Technology Site, RF-KHLL-D&DOPS-2004-0003-

Site personnel declared an Alert-Star Operational Emergency due to evidence of combustion taking place in Room 402 at Building 991 (plant personnel observed smoke coming out of small penetrations above the exterior door of Room 402). Fire Department personnel responded to the scene. Since the room had been filled with a polyurethane foam agent prior to the combustion event, both to restrict personnel access and in preparation for building demolition, site personnel speculate that the smoke was caused by a chemical/exothermic reaction that is part of the foam's curing process. The only combustible material in the subject areas are small amounts of wood and plastic sheeting which were used to erect walls to contain the foam. Fire water was introduced into Room 402, and was effective in controlling the amount of smoke observed. As a precaution, Fire Department personnel are undergoing blood evaluations by the site medical department to determine if there have been any hazardous material exposures. Site personnel have instituted air and water monitoring.

Evacuation at SMC Due to Small Flame on Leaking Acetylene Cylinder

Idaho, Idaho National Engineering Laboratory, Specific Manufacturing Capability, ID-BBWI-SMC-2004-0003

After the completion of welding/cutting activities (using a cart-mounted oxygen acetylene torch), an employee observed a small flame (about one inch long), which appeared to originate between the acetylene tank's isolation valve stem and the packing nut. The employee warned others in the area, and again turned the valve handle on the tank to verify that the valve was fully closed. After observing that the flame did not go out, the employees evacuated the area. Fire Department personnel responded, but found no flames on the acetylene tank. A flammable gas detector was used to inspect the tank, but no leak was detected. The cutting torch cart was removed from the building and the tanks were capped. The oxygen tank was removed from the cart. The acetylene tank will be returned to the vendor for examination. Stanchions and safety ribbon were used to isolate the acetylene tank and the cart.

Accumulation Of Oil In Compressed Air System Results In Fire

Pantex Plant, ALO-AOBWXP-PANTEX-2003-0043

On August 28, 2003, at the Pantex Plant, vapors from accumulated oil in a compressed air system dryer ignited, causing a fire inside the piping system. The fire self-extinguished when the oil was consumed. Firefighters found no smoke or fire but several components of the compressed air system showed signs of extreme heat, such as burned paint. Investigators determined that an equipment problem was the direct cause of this event. Excessive oil traveled from the air compressor and accumulated downstream of the filter, receiver, and separator. Forced hot air (400°F to 425°F) was sufficient to ignite oil vapors in the piping. Investigators identified the following three contributing causes for this event: a lack of procedure resulted in no preventive maintenance being prescribed or performed on the dryers or their associated filters during 3 years of operation, which allowed oil buildupto go undetected; inattention to detail by utilities operators resulted in warning signs of problems not being investigated and resolved in a timely manner, including excessive oil consumption by the compressor and dew point temperature alarms; defective or inadequate procedures for post-installation testing and commissioning of the equipment failed to detect quality problems with system instrumentation. Investigators determined that the root cause of the incident was inadequate administrative control in that there was a lack of formality in the commissioning process necessary to place the equipment in a stable condition for plant operations.

PROPERTY/EQUIPMENT PROBLEM

Lack of Ground Fault Protection Leads to Failure of Heat Trace Junction Box

Oak Ridge National Laboratory, (SELLS) Y-2004-OR-BJCBOP-0301)

On February 16, 2004, at Oak Ridge National Laboratory, an operator investigated an unusual noise emanating from a heat trace junction box in an office trailer and found that the cover had burst, scattering pieces all around the trailer. Operations personnel covered the box with plastic to protect it and applied a lockout-tagout to the system. Investigators believe that moisture intrusion near the 240-volt power source caused a ground fault in the heat trace line, which led to the box overheating and bursting. Investigators determined that the most likely cause of the incident was the lack of protection for the heat trace. The system was installed in the mid-1980s under an electrical code that did not require ground fault protection. Current National Electric Code requires ground fault protection, and newer maintenance manuals for the system recommend it when the power source will be exposed to moisture or water.

RADIATION SAFETY

Elevated X-ray Level at Test Facility after Employees Fail to Follow Procedure

Sandia National Laboratory -AL, ALO-KO-SNL-6000-2004-0003

After energizing the EB-1200 Radiation Generating Device (RGD), operators found elevated x-ray radiation levels. The x-ray level was approximately 1 mR/hour. Site personnel later determined that, following a recent configuration change of the vacuum tank, a survey had not been conducted, as required. The operators manually shut down the EB-1200 RGD. Subsequently, the source of the elevated radiation level was identified as leakage through an unshielded electrical feedthrough on the vacuum tank. The feedthrough was shielded, the EB-1200 RGD was re-energized, and a survey showed that radiation levels returned to acceptable operational limits. Personal dosimeters of the operators showed that no dose had occurred. Later, management directed a shutdown of EB-1200 RGD operations until a review is completed and appropriate corrective actions are implemented.

Final LANL Occurrence Reports

2ND QUARTER - 2004

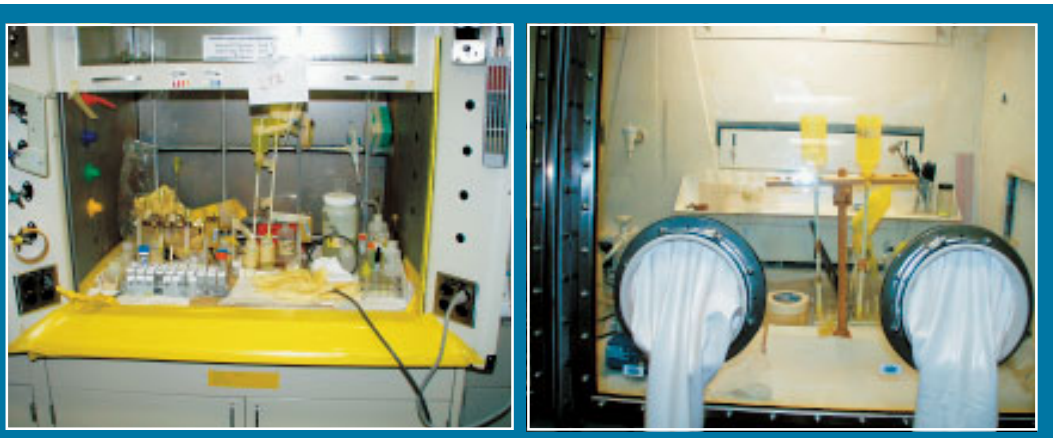
During the second quarter of 2004, DOE approved 28 final occurrence reports. The 28 events are grouped into 6 categories: Personnel Safety (11), Safety Basis (7), Environmental (3), Radiation Safety (4), Property/Equipment Problem (2), and Fire Protection (1). The following section provides details for one of these events, including the description of the event, causal analysis, and corrective actions.

Contamination Detected on Worker's Face

ALO-LA-LANL-CMR-2004-0001

SYNOPSIS: On March 4, 2004, an Actinide Analytical Chemistry (C-AAC) employee at the Chemistry and Metallurgy (CMR) Building detected alpha contamination on her chin and lips after performing isotope separation studies involving a 3 molar nitric acid solution containing plutonium (Pu) 239 and Uranium (U) 233. The employee immediately notified a radiological control technician (RCT), who performed a direct survey of the employee's face and measured 18,000 dpm of alpha contamination on her chin and lips. Health Physics Operations (HSR-1) and Occupational Medicine (HSR-2) specialists took appropriate decontamination actions. Investigators concluded that the employee most likely accidentally cross-contaminated herself during the course of performing work.

INCIDENT: The employee had been performing isotope separation studies inside an open front hood. The employee wore the requisite personal protective equipment, including a lab coat, two pairs of latex gloves, paper sleeves, safety glasses with side shields, and booties. the employee doffed and donned the outer pair of gloves as necessary throughout the work and performed contamination monitoring of her inner gloves each time. During the later stages of the work, the employee felt a slight itching sensation on her chin. The employee monitored her chin with an alpha probe mounted on the front of the hood, and the instrument alarmed, indicating contamination was present. The employee immediately notified a radiological control technician (RCT), who performed a direct survey of the employee's face and measured 18,000 dpm of alpha contamination on her chin and lips. The RCT, with assistance from other HSR-1 personnel, attempted to remove the contamination using the tape press method, and additional decontamination using soap and tepid water, reducing contamination levels to approximately 4,500 dpm. The employee was transported to Occupational Medicine (HSR-2), where personnel continued decontamination efforts using soap and water, bleach, steam, and a topical chelating agent (DTPA). The contaminated areas were covered with a dressing and the employee was allowed to go home for the night. The employee returned the next day to HSR-2, where personnel performed appropriate decontamination measures.



These photos demonstrate the engineering control applied by C-AAC. At left is the experiment location where the event occurred. The experiment was moved to a glove box, right photo, with a window between the operator and the experiment.

CAUSAL ANALYSIS: Investigators determined that the primary Integrated Safety Management (ISM) System causal factor in this event was a failure by management to adequately

implement administrative work controls, which investigators believe was a result of infrequent interaction between supervisors and managers and their employees concerning radiological work practices. The investigators said a contributing ISM failure was the failure of line managers to recognize and act upon previous events of a similar nature involving the employee.

The causal analysis focused on two possible scenarios. The first was a possibility that a small splash occurred. However, isotopic analysis results combined with the employee's statement that no spills or splashes were observed during the work led to the conclusion that a spill or splash was not the likely cause of the event. The second scenario was the possibility that the employee inadvertently cross contaminated herself while performing the work, which spanned several hours and required that the employee remove her hands from the hood many times. Regarding this second scenario, an industrial hygienist who evaluated the configuration of the equipment inside the fume hood concluded the experimental setup and housekeeping were acceptable, but the configuration of the equipment inside the fume hood could have contributed to the possibility of inadvertent contact by the worker with the equipment. The investigators also reviewed results of the post-event radiological survey, which found contamination on the floor in front of the hood and on the lip of the hood. Results of fixed head air sampling filters and continuous air sampling filters in the room showed no detectable activity. No contamination was detected on the employee's inner gloves. Based on the work, the experiment setup, and survey results, investigators concluded that the employee accidentally contaminated herself during the work.

The investigators noted that because C-AAC chose to perform this activity in an open fume hood, a high degree of emphasis was placed on administrative controls and personal protective equipment to prevent personal contamination. The employee was experienced and had received extensive training, but she had been involved in three skin, clothing, and PPE contamination events in the past two and a half years. C-AAC management responded to the first event with actions that included reviewing hazard control plans, work instructions, and radiological control procedures. However, investigators did not find that any documented actions were taken in response to the other two events, other than normal decontamination and recovery activities. C-AAC management did not identify the need to specifically evaluate the employee's work environment and work practices, which could have been used to provide constructive feedback to the employee and resulted in improvements to the work environment, the work process, and the employee's radiological control practices.

CORRECTIVE ACTIONS:

C-AAC re-evaluated the experimental design of the activity and implemented engineering and administrative controls that reduce the potential for cross-contamination and mitigate spill hazards. These include the following actions:

- C-AAC moved the activity to a larger work-space that allows the operator more freedom of movement with less chance of spilling corrosive liquids;
- C-AAC moved the experiment to a glove box with a window between the operator and the experiment at all times. This will eliminate any possibility of droplets of corrosive liquids from splashing on operators.
- C-AAC implemented CMR Notice 005, which defines eye protection requirements for Nuclear Materials Technology (NMT) Division personnel and others performing work at facilities managed by NMT Division.

DOE-APPROVED FINAL REPORTS

The following final occurrence reports were approved by DOE in the past quarter:

Personnel Safety

Magnet Power Supply Inadquately Controlled Through LOTO
ALO-LA-LANL-ACCCOMPLEX-2004-0001

Electrical and Telecommunication Lines Struck During Demolition of Building Foundation
ALO-LA-LANL-ADOADMIN-2004-0002

Work on De-energized Circuit in Motor Control Center Without Application of Lockout
ALO-LA-LANL-CMR-2001-0013

Entry into Confined Space by Two Pipe Fitters with Improper Lockout and By a Sheet Metal Worker Without Required Lockout of Water Supply
ALO-LA-LANL-CMR-2001-0016

Previously Unknown Hazard Results in an Unexpected Chemical Reaction and Minor Injuries to an Employee
ALO-LA-LANL-ADOADMIN-2004-0004

Movement of Forklift That Was Tagged Out-of-Service

(CONTINUED ON PAGE 14)

DOE-APPROVED FINAL REPORTS

(CONTINUED FROM PAGE 13)

ALO-LA-LANL-FIRNGHELAB-2003-0010
Near Miss, Glass Diffuser Falls From Ceiling
ALO-LA-LANL-FIRNGHELAB-2004-0003
Subcontractor Dropped a Bundle of Metal Roof Panels From a Mobile Crane onto Pickup Truck
ALO-LA-LANL-LANL-2003-0010
Fatality at DOE Leased Facility During Lunchtime Basketball Game
ALO-LA-LANL-FIRNGHELAB-2003-0008
Unexpected Spray of Uncharacterized Material While Pressurizing an Air Line
ALO-LA-LANL-TA55-2003-001
Potential Concern: Noncompliance With Walk-down Requirements of the New Integrated Work Management Process
ALO-LA-LANL-WASTEMGT-2004-0001

Safety Basis

Unreviewed Safety Issue at DARHT and PHERMEX
ALO-LA-LANL-FIRNGHELAB-2004-0002
Failure to Meet Deadline in Condition of Approval of JCO for LANL Nuclear Facilities
ALO-LA-LANL-LANL-2003-0005
Noncompliance with a Hazard Control in the Implementation Plan for the TSD and TSR
ALO-LA-LANL-MATWAREHS-2004-0001
Facility Did Not Properly Justify the Use of TSR Surveillance Grace Period
ALO-LA-LANL-TA18-2004-0002
Declaration of a Potentially Inadequate Safety Analysis (PISA) at Technical Area 55, Subsequent USQ Positive
ALO-LA-LANL-TA55-2004-000
Positive USQD on Lightning Initiated Tritium Release
ALO-LA-LANL-TRITFACILS-2003-0006
Missed Surveillance of Equipment With No Loss of Safety Function
ALO-LA-LANL-TRITFACILS-2004-0002

Environmental

Discharge at Material Recycling Facility
ALO-LA-LANL-ADOADMIN-2004-0003
Hydraulic Oil Spill Results in Non-Routine Discharge Notification To NMED/EPA
ALO-LA-LANL-FIRNGHELAB-2003-0005
Compliance Order (NMED 04-02) Resulting From NOV Concerning 2003 RCRA Inspection
ALO-LA-LANL-LANL-2004-0004

Radiation Safety

Contamination Detected on Worker's Face
ALO-LA-LANL-CMR-2004-0001
Contamination Discovered on Ludlum 139 Monitor at General RCT Pool office
ALO-LA-LANL-ESHSUPT-2002-0003
A Single Fixed Head Air Sampler Filter Indicated a 53 DAC-Hour Airborne Release of Radioactive Material in TA-55-4 Room 327
ALO-LA-LANL-TA55-2003-0011
Two Employees Found Contaminated After CAM Alarmed During Work in TA-55, Building 4, Room 201B
ALO-LA-LANL-TA55-2003-0017

Property/Equipment Problem

Defective Surge Protector Discovered at A53 Training Office
ALO-LA-LANL-ESHSUPT-2004-0003
Suspect SAE Grade 5 Bolts Discovered at the Isotope Production Facility
ALO-LA-LANL-ESHSUPT-2004-0004

Fire Protection

Frozen pipe degrades fire suppression system performance
ALO-LA-LANL-SIGMA-2003-0002

Human error can't be prevented, but it can be reduced

Human error is widely acknowledged as the major cause of quality, production, and safety risks in many industries. Not surprisingly, 90 percent of all incidents are triggered by human errors.

Although it is unreasonable to expect that human error will ever be completely prevented, there is growing recognition that many human performance problems stem from a failure within organizations to develop an effective policy for managing human reliability. In fact, it has become accepted in the field of Human Performance Management (HPM) that accidents, ill health and incidents are seldom random events, but generally arise from failures of control and involve multiple contributory elements.

While the immediate cause of incidents may be a human or technical failure, HPM professionals emphasize that incidents usually arise from organizational failings. According to T. Shane Bush of the Idaho National Engineering and Environmental Laboratory, about 70 percent of all incidents can be traced back to organizational issues.

Bush, who was one of the speakers in May at an Energy Facility Contractors Group (EFCOG) team meeting in Las Vegas, Nevada, said organizations can develop successful policies to minimize the contribution of human limitations and fallibilities.

Human Performance Management, Bush said, is based on these principles:

— People are fallible and even the best people make mistakes.

— Error-likely situations are predictable, manageable and preventable.

— Individual behavior is influenced by organizational processes and values.

— People achieve high levels of performance largely because of the encouragement and reinforcement received from leaders, peers, and subordinates.

— Events can be avoided through an understanding of the reasons mistakes occur and application of the lessons learned from past events.

In other words, human error is a result, and ***not*** the cause. "Events are not so much the result of error-prone workers as they are the outcome of error-prone tasks and error-prone work environments, which are controlled by the organization," Bush said.

While many accidents or incidents are blamed on the actions or omissions of a worker, this response by management ignores the fundamental failures that led to the accident. These "latent" failures are usually rooted deeper in the organization's design, management and decision-making functions.

Many major accidents can be traced to latent conditions such as those related to poor design, gaps in supervision, undetected manufacturing defects, maintenance failures, unworkable procedures, shortfalls in training, or less than adequate tools and equipment. These conditions may be present for years before they combine with local circumstances to penetrate a system's defenses.

Organizations that improve and optimize procedures, workplace design and process design can improve human performance. Those organizations that focus on identifying the organizational, workplace, and management conditions that lead to human performance problems are better able to proactively mitigate them. This success was demonstrated by the commercial nuclear power industry, which reduced significant events from 238 per year in 1985 to 3 in 1999, Bush said.

Bush said the new paradigm for Human Performance Management practitioners should be: "Reducing error AND managing defenses leads to zero events." He offered attendees an improvement plan that asked them to acquire basic Human Performance Management tools, such as an understanding of "error precursors" that affect worker behavior and contribute to accidents, including time pressure, unclear goals, changes, assumptions, and complacency.

An improvement plan should include a commitment to developing task previews that include a comprehensive anatomy of events to develop a defense in depth to combat error. The plan should also encourage the use of observations, and coaching and counseling to assist workers in developing their own error defenses.

These tools, Bush said, should be used in work planning, project planning, pre-job briefs and work observation. To help the attendees out, Bush shared a simple yellow card that can be handed out to workers and managers to help them develop error defenses. The front and back sides of the yellow card are shown above. The concepts presented by Bush should be a cornerstone in the manager/worker interactions associated with the Laboratory's Management Walk-Around Program.

Before you proceed

The Four Key Questions At the Pre-Job Briefing

Ask yourself, your peers, your supervisor

1. *What are the critical steps or phases of this task?*
   (Important parts of the task that must go right)
2. *How can we make a mistake at that point?*
   (Use error precursors card, error prevention coaching card)
3. *What is the worst thing that can go wrong?*
   (A review of potential consequences and contingencies)
4. *What barriers or defenses are needed?*
   (Peer Check, 3-way Communication, Place Keeping, Flagging)

Error Precursors *(short list)*

Task Demands	Individual Capabilities
▪ Time pressure (in a hurry) ▪ High Workload (memory requirements) ▪ Simultaneous, multiple tasks ▪ Repetitive actions, monotonous ▪ Irrecoverable acts ▪ Interpretation requirement ▪ Unclear goals, roles, & responsibilities ▪ Lack of or unclear standards	▪ Unfamiliarity with task / First time ▪ Lack of knowledge (mental model) ▪ New technique not used before ▪ Imprecise communication habits ▪ Lack of proficiency / Inexperience ▪ Indistinct problem-solving skills ▪ "Hazardous" attitude for critical task ▪ Illness / Fatigue
Work Environment	**Human Nature**
▪ Distractions / Interruptions ▪ Changes / Departures from routine ▪ Confusing displays or controls ▪ Workarounds / OOS instruments ▪ Hidden system response ▪ Unexpected equipment conditions ▪ Lack of alternative indication ▪ Personality conflicts	▪ Stress (limits attention) ▪ Habit patterns ▪ Assumptions (inaccurate mental picture) ▪ Complacency / Overconfidence ▪ Mindset ("tuned" to see) ▪ Inaccurate risk perception (Pollyanna) ▪ Mental shortcuts (biases) ▪ Limited short-term memory

03-GA50109-06

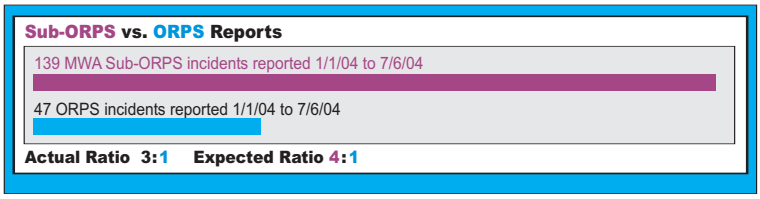
T. Shane Bush's "yellow card" -- a "new" MWA guidance card for LANL

Management Walk-Around Performance

LIR 307-01-03, "Management Safety Walk-Arounds," establishes the performance requirements for the frequency of management walk-arounds. The division, program, or office leader is responsible for establishing which personnel will conduct management walk-arounds (MWAs) and the frequency of walk-arounds within their organization. The minimum expectation expressed in the LIR is three walk-arounds per manager per quarter. DOE/NNSA has determined that this measure will be part of the Appendix F measure relating to line management self-assessment.

The adjoining chart shows the results for the 1st (Jan – Mar) and 2nd (Apr – Jun) quarters of calendar year (CY) 2004 and reflects the walk-arounds that had been submitted as of July 6, 2004. The percentage calculations are generally based on the requirements for each manager as shown in the organization's MWA Compliance Report and include full credit for completion of the minimum requirements and partial credit for completion of less than the minimum requirements.

NOTE: Although some organizations have established higher expectations for some managers and have established requirements for non-managers, only the minimum expectation of three per quarter per manager was used in this report.



ORPS vs. SUB-ORPS: A SUCCESS STORY -- The graphic above shows the Laboratory's dramatic improvement in ORPS-vs.-Sub-ORPS reporting, improving from a ratio of 0.8 to 1 in March 2004 to a ratio of 3 to 1 in July 2004. Based on LANL history and typical industry performance, the expected ratio for sub-ORPS to ORPS events is approximately 4-to-1. It is now a requirement at the Laboratory that managers record subthreshold safety events through the LANL Management Walk-Around (MWA) system. These include safety events of minimal significance that are not reportable to DOE/NNSA through the ORPS process.

SHARE THE "MIRROR"

The LANL Performance Surety Division recommends that LANL managers include the "LANL Mirror" in their required reading programs.

Directorate/ Organization	Percentage of Managers Meeting Requirements Jan - Mar	Percentage of Managers Meeting Requirements Apr - Jun
ADA	**62.83%**	**80.63%**
AA	50.0%	85.7%
CER	61.9%	100.0%
CFO	56.9%	84.3%
DV	100.0%	100.0%
HR	45.6%	51.0%
IM	61.9%	84.5%
OEO	100.0%	100.0%
OMSBUD	100.0%	67.0%
QIO (PCO)	66.7%	100.0%
SUP	91.6%	91.7%
ADO	**80.5%**	**89.9%**
FWO	81.4%	94.9%
HSR	87.5%	97.8%
IFC	88.8%	88.8%
ISEC	50.0%	100.0%
PS	93.3%	100.0%
PM	96.6%	93.3%
RRES	70.1%	74.1%
S	72.9%	88.9%
ADSR	**87.8%**	**81.9%**
C	100.0%	96.7%
EES	100.0%	94.4%
MST	52.9%	72.9%
OEEI	66.5%	100.0%
T	100.0%	58.3%
TT	100.0%	93.4%
ADST	**12.5%**	**68.3%**
CIO	50.0%	100.0%
STB	0.0%	61.9%
ADTR	**88.7%**	**89.8%**
B	95.1%	94.4%
D	100.0%	93.3%
ISR	82.6%	81.5%
N	85.4%	93.8%
ADWEM	**84.3%**	**92.4%**
ESA	80.8%	100.0%
NMT	89.8%	88.2%
CMRR	0.0%	0.0%
ADWP	**80.3%**	**80.5%**
CCN	70.6%	96.5%
CCS	51.3%	87.2%
DX	93.6%	73.8%
LANSCE	65.1%	53.0%
P	97.8%	87.5%
X	95.5%	95.0%
Other	**63.6%**	**63.9%**
CHS	33.3%	22.3%
LC	66.7%	71.4%
POL	100.0%	100.0%
LANL Total	**79.0%**	**84.9%**

Occurrence Report Corrective Action Status

The status of corrective actions associated with LANL occurrence reports is tracked by the Occurrence Investigation Group (PS-7) through the Issue Tracking (I-Track) System. LANL facility and line management develop corrective actions, with associated target completion dates, that address the causes of Laboratory occurrences. Once developed, the actions are approved by the LANL action owner and by DOE. LuAnna Cordova of PS-7 is then responsible for entering the actions into I-Track and assisting with tracking the actions to closure. Contact LuAnna at 667-0598 for more information concerning I-Track and corrective action tracking. The following is the status of LANL corrective actions as of June 30, 2004:

	Corrective Action Completion Rate 10/1/03 to 06/30/04				
DIRECTORATE / Organization	Completed On Time	Completed Late	Overdue	Action Completion Rate	Not Yet Due
DIR	1	0	0	100%	0
ADA				*27%*	
AA	0	0	0	N/A	0
CER	0	0	0	N/A	0
CFO	0	0	0	N/A	0
DVO	0	0	0	N/A	0
HR	0	0	0	N/A	0
IM	0	0	0	N/A	0
OEO	0	0	0	N/A	0
QIO	0	0	0	N/A	0
SUP	3	8	0	27%	1
ADO				*75%*	
FWO	34	9	2	76%	7
HSR	8	0	2	80%	0
IFC	0	0	0	N/A	0
KSL	19	3	7	66%	0
PTLA	0	0	0	N/A	0
PM	9	0	0	100%	0
PS	8	1	3	67%	2
RRES	10	2	0	83%	0
S	0	0	0	N/A	0
ADSR				*100%*	
C	2	0	0	100%	0
EES	0	0	0	N/A	0
IBD	0	0	0	N/A	0
OEEI	0	0	0	N/A	0
MST	9	0	0	100%	0
T	0	0	0	N/A	0
ADTR				*100%*	
B	0	0	0	N/A	0
D	0	0	0	N/A	0
N	1	0	0	100%	0
ADWE				*81%*	
ESA	6	2	0	75%	3
NMT	7	0	1	88%	10
ADWP				*50%*	
CCN	0	0	0	N/A	0
CCS	0	0	0	N/A	0
DX	4	1	5	40%	3
LANSCE	5	1	2	63%	1
P	0	0	0	N/A	0
X	0	0	0	N/A	0
LANL Total	**126**	**27**	**22**	**72%**	**27**

NNSA team reviews NASA CAIB report

On September 9, 2003, the NNSA Administrator, Ambassador Linton Brooks, assigned Brigadier General Ronald Haeckel to assemble a team to review the Columbia Accident Investigation Board (CAIB) report and identify lessons learned from the NASA experience that might be relevant to NNSA. As a result of this review, DOE NNSA published a Lessons Learned document that summarizes the team's findings. The following is shortened version of the lesson learned document. The complete report is available at http://www.lessons-learned.net.

TITLE: Willingness to Accept Criticism and Diversity of Views is Essential Lesson ID: NNSA-04-CAIB-CI-4 (Source: User Submitted)

DATE: 3/18/2004 Contact: Ray Corey, 505-845-4114

STATEMENT: The NASA Columbia Accident Investigation Board Report identified problems in the areas of: acceptance to new information; willingness to listen to outside expertise; intellectual curiosity and skepticism; lack of openness in communication and trust; and lack of encouragement in debate and diverse opinions.

DISCUSSION: NNSA needs to demonstrate an unambiguous visible strategic commitment to safety that includes giving safety a corporate identity and clearly establishing safety as an essential element to mission success by (1) establishing an NNSA Senior Safety Council that is comprised of experienced safety professionals to guide NNSA and provide long-term consistency and continuity; and (2) revising NNSA and Site Office strategic plans to specifically include a safety initiative.

ANALYSIS: Creating a culture in which executives are willing to hear the bad news involves building trust within an organization. Frequently managers are unable to discern the differences between feedback and criticism. Feedback is an emotionally neutral engineering term. It refers to outcome information that is fed back into a process to indicate whether that process is operating within designed parameters. For example, the sensor in a thermostat provides feedback whether the room temperature is below, at or above the target. Performance feedback when appropriately delivered, relates perceived outcomes to an intended target. Feedback is objective and specific and describes observable behaviors and effects.

ACTIONS: (CONCLUSION) Sub-team 1 concluded that NNSA should change the safety behavior of NNSA to be more open to alternate views and minority opinions. NNSA needs to develop and implement Site specific and key organizational procedures on differing professional opinions. One example within NNSA is that process currently used by the Nuclear Explosives Safety Study group. Further, NNSA needs to establish a climate of healthy professional discourse by developing and implementing the mechanisms and opportunities that support and encourage free flowing discussion and innovation. As an example, hold periodic (no less than semi-annual) safety forums to discuss, as a minimum, trends, issues, lessons learned and best practices from both internal and external sources.

Finally, change the management - employee relationship and communication patterns to encourage individual initative, growth, involvement, and a sense of identity to include implementing a program requiring safety staff to periodically brief senior management on status and concerns relating to their area of responsibility.

RECOMMENDATIONS: Listed below are specific recommendations for both individuals and the organization of NNSA. Suggested improvements within contractor organizations may need to be evaluated by that organization or feedback from the respective DOE office that provides the interface, if applicable.

- NNSA senior management should communicate the cultural and organizational lessons learned for NNSA from the NASA CAIB Report.
- Change the safety behavior of NNSA to be more open to alternate views and minority opinions. Develop and implement Site specific and key organizational procedures on differing professional opinions. Develop and implement a formal standardized minority opinion disposition process such as that used by the Nuclear Explosives Safety Study group.
- Develop and publish a safety culture policy statement that clearly defines NNSA's commitment and expectations regarding the role of safety within NNSA. In addition to the vetting process of the Leadership Coalition, NNSA should consider bringing in outside expertise to give the NNSA Administrator independent assistance in development and implementation steps toward improving NNSA's safety culture.
- Establish an NNSA Senior Safety Council that is comprised of experienced safety professionals to guide NNSA and provide long-term consistency and continuity of safety policies, standards, and practices. Hold periodic (no less than semi-annual) safety forums to discuss, as a minimum, trends, issues, lessons learned and best practices from both internal and external sources.

REFERENCES: 1. CAIB Report, pages 180, 181, 190, 192. 2. Virgin, B., Shooting the messenger is a Result of Bad Leadership, Seattle-Post Intelligencer, March 6, 2003. 3. Brenner, Rick, Never Ever Kill The Messenger, Chaco Canyon Consulting. 4. Anderson, Cheri, Don't Shoot the Messenger. 5. Daughtry, T., and G. Casselman, Raising the Executive Performance Bar; Why We Shoot the Messenger.

1st TAKE Safety Action

Incident ALERT Message from Performance Surety

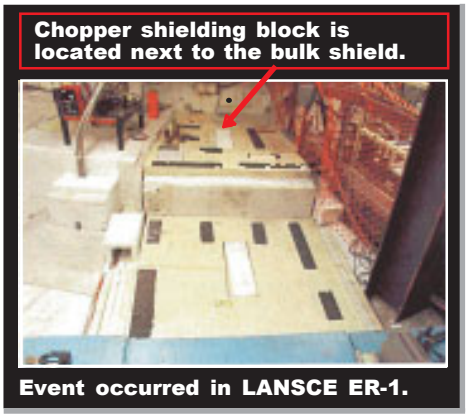
Workers receive low neutron dose

On March 8, 2004, two technicians received a low dose of low-energy neutrons while performing maintenance work at the Los Alamos Neutron Science Center (LANSCE). Before the incident, the workers had been working in Experimental Area 1 (ER-1), downstream of the IL target. The target receives proton beam, and the resulting neutron flux then follows a controlled route of 16 flight paths. Maintenance work to remove a piece of equipment (chopper) from one of the flight paths (FP-10) was initiated on February 26, 2004. The LANSCE-12 technicians secured the beam control (i.e., shutter) for FP-10, removed shielding in ER-1, and removed the chopper for repairs. On March 3, the LANSCE-12 experimental area manager signed a checklist indicating that ER-1 and adjoining Experimental Area 2 (ER-2) were ready for proton beam delivery to the IL target, although the shielding was still removed above the chopper for FP-10. On March 9, the LANSCE-12 technicians were directed by their supervisor to reinstall the chopper onto FP-10. However, proton beam was in production to the IL target and the shutters for the two adjacent flight paths were open, which meant neutron beam was available for these flight paths. Under these conditions, neutron radiation from these adjoining flight paths is known to "leak" into the chopper area for FP-10. As they neared the completion of their task, one of the technicians heard a shutter in one of the adjacent flight paths operating. The technician then recognized that they were possibly working in an area with the potential for neutron radiation. The highest neutron dose rate in the work area was measured at 170 millirem per hour. The technicians' TLD and PN3 dosimeters showed that one technician received a wholebody dose of 25 millirem and the other received 7 millirem.

PRELIMINARY ANALYSIS:

The investigation into this event is continuing and formal findings will be made available when the investigation is complete. Preliminary analysis indicates that neither the LANSCE-12 employees, nor the area RCT recognized the change in the facility operational status prior to re-installation of the chopper, although an area status board identified the fact that the beam was on. The investigation revealed that engineering controls had not been implemented to prevent the neutron leakage from the adjacent fight paths and that inadequate formal administrative controls resulted in a failure to ensure verification of shielding configuration prior to authorization of particle beam operation. In addition, formal work controls were not implemented to ensure that workers interfaced with RCTs and obtained surveys of the work area before entering the area, or that the work area was controlled in accordance with the requirements of 10 CFR 835.

Investigators determined that informally designated roles and responsibilities, and the lack of procedures for chopper removal, maintenance and re-installation weighed heavily in this event. LANSCE-12 did not prepare an Integrated Work Document for the maintenance work, did not apply a Hazard Control Plan or other work control document specific to the task and associated radiological conditions, and did not contact HSR-1 for surveys and additional support/controls at the chopper re-installation phase. Furthermore, a pre-job briefing was not conducted prior to the re-installation work, and the technicians and RCT failed to recognize the potential neutron leakage from adjacent flight paths until the work was almost complete.



Event occurred in LANSCE ER-1.

FOR DETAILS:

- **Occurrence Report:** ALO-LA-LANL-ACCCOMPLEX-2004-0002
- **Facility Contact:** Ben Poff, 665-2584
- **PS-7 Occurrence Investigator:** Rita Henins, 665-6981

An additional alert about this event will follow if the investigation reveals details that indicate an unknown hazard exists for other employees involved in this type of activity. For more information about "1st Take," please call LANL PS-7 at 665-0033.

May 26, 2004
LANL ACCCOMPLEX-2004-0005

INITIAL RECOMMENDATIONS:

Configuration management and Conduct of Operations criterion establish and drive formality of work activities, including maintenance of equipment and system status. These program elements should be incorporated into programmatic as well as facility work so that work environments and work activities are controlled, and workers do not encounter hazards, such as the one described here, without proper controls in place.

Primary recommendations to consider include the following:

— Evaluate conditions and ensure appropriate engineering controls are in place to prevent inadvertent radiation exposure. During these evaluations, consider direct sources and indirect sources, such as from adjacent equipment or systems.

— Implement formal controls for the verification of shielding configuration as well as verification of experimental and facility work prior to authorizing any operation involving the production of radiation fields, including accelerator operation, radiography, critical assembly operation, x-ray production, etc.

— Implement work controls and work control documentation that formalizes the authorization of work in potentially high radiation areas.

LESSONS LEARNED

GUIDANCE: LANL resources at hand

Guidance on radiation work and work management is available at:

- LIR402-700-01.2, **Occupational Radiation Protection Requirements**
- HSR Notice 142, **Integrated Work Management – Interim Process**
- LIR 300-00-01.4, **Safe Work Practices**
- LIR300-00-02.4, **Documentation of Safe Work Practices**

The LANL contact for radiation control is HSR Radiation Protection Program Manager Paul Hoover, 665-4691.

1st TAKE

Safety ACTION

Incident ALERT Message from Performance Surety

FOR DETAILS:

- **Occurrence Report:** ALO-LA-LANL-LANL-2004-0001
- **Facility Contacts:** Mitch Harris, 667-6131, and/or Phil Romero, 665-8503
- **PS-7 Occurrence Investigator:** Rita Henins, 665-6981

An additional alert about this event will follow if the investigation reveals details that indicate an unknown hazard exists for other employees involved in this type of activity. For more information about "1st Take," please call LANL PS-7 at 665-0033.

June 16, 2004
LANL 2004-0006

The 1972 P&H crane's 100-foot boom struck and severed all three phases of 13.2 kV overhead power lines as it was traveling from TA-60 to TA-15.

LESSONS LEARNED

Crane strikes 13kV lines

On February 26, 2004, Laboratory subcontractor employees involved in moving a crane to TA-15 escaped injury when the crane boom struck and severed all three phases of 13.2 kV overhead power lines. The resulting phase-to-phase fault in the utility lines dropped the power. The accident occurred as two escort vehicles and the 90-ton crane with 100 feet of boom traveled toward the DARHT facility. The 32-year-old crane is outfitted with separate cabs for the driver and boom operator, and communication between the two cabs, as well as between the crane and the escorts, was limited to hand signals and a horn. The boom operator was attempting to lower the boom below the horizontal when a mechanical failure in the boom pawl linkage prevented the boom from lowering. The operator then honked the horn in an attempt to warn the driver to stop the crane as the convoy approached the 29-foot-high overhead power lines. By the time the driver responded, the crane struck the 13.2 kV lines. Fortunately, no one was injured in the event. However, because of the age of the crane, it was a total loss and will not be repaired.

PRELIMINARY ANALYSIS:

A major factor in this event was a failure by the Laboratory and the subcontractor to establish a policy and/or requirements regarding the transport of oversize/overweight loads over LANL property and DOE-managed roadways, even though state law had clearly recognized the need to control the transport of such loads and the subcontractor had experienced mishaps with heavy equipment and overhead hazards in the past. The preliminary analysis indicates that primary failure involved in the crane transport was that the subcontractor failed to identify hazards specific to the task or to implement task-specific controls.

The investigators found that training listed in the IWD was not adequate for oversize/overweight load vehicle escorts. The investigators also expressed concern that the subcontractor relied on boilerplate language to address IWD controls instead of ensuring that the language invoked thoughtful task-specific controls. A final contributor to the event was the challenge faced in using aging equipment not intended for the frequent traveling to which the 90-ton crane was subjected. The crane boom was difficult to disassemble, and the disassembly incurred hazards and costs that are not present when using a contemporary hydraulic-boom crane.

INITIAL RECOMMENDATIONS:

Since this event, the Laboratory has established institutional guidelines that must be followed in preparing work plans that include transporting of heavy equipment. The Laboratory published Laboratory Notice No. 140, Movement of Oversized Vehicles, to establish a set of consistent, standardized safety-related requirements for transporting oversized vehicles on DOE-owned and LANL-managed roadways and site properties. The new requirements address escort functions and the need for a determination to be made regarding possible closure of roadways to vehicular traffic during transport of oversize vehicles.

In addition to adhering to these new requirements, work plans for any movement of oversize vehicles must address:

— how hazards are to be communicated and mitigated during movement,

— roles and responsibilities of escorts and who should be trained on overhead and surface obstruction analysis, and communication methods,

— requirements for enlisting the help of utilities linemen in establishing the vertical clearances of overhead hazards, and

— contingency plans for inclement weather or equipment malfunctions.

GUIDANCE: Resources at hand

Guidance on LANL heavy equipment and work management is available at:

- Notice 140, **Movement of Oversized Vehicles**
- LIR 402-1120-01.0, **Cranes, Hoists, Lifting Devices, and Rigging Equipment**
- Notice 142, **Integrated Work Management – Interim Process**
- DI04-004, **Integrated Work Management – Interim Process, Director's Instruction**
- LIR 300-00-01.4, **Safe Work Practices**
- LIR300-00-02.4, **Documentation of Safe Work Practices**

The LANL contacts for safety issues involving the movement of oversize loads are FWO-UI Traffic Engineer Charles Trask, 667-7756, and/or HSR-5 Construction Safety Team Leader Phil Romero, 665-8503.

LOS ALAMOS NATIONAL LABORATORY JUNE 28, 2004

LESSONS LEARNED NOTE

Potential Concerns Result from Installation of Hasp on Refrigerator

LESSONS LEARNED: Work planners must resist pressure to improperly designate tasks as Skill of Craft to speed up the work process because doing so is a violation of safe-work policies and denies craft employees the protection assured by a properly performed Activity Hazard Analysis. On May 8, 2003, a LANL support services subcontractor carpenter using a cordless drill to install a hasp on a refrigerator created a spark when a screw struck the refrigerator wiring. The carpenter, who was not injured, performed the work at Technical Area 43, Building 1, Room B180 under what was later determined to be improper Skill of Craft (SOC) authorization. In addition, investigators noted that the modification of listed appliances is not allowed at LANL if listed equipment that satisfies the need is available for purchase, as was the case with this refrigerator. It is important to note that the Laboratory introduced a new process for performing work at LANL on Nov. 3, 2003 (revised April 27, 2004) that effectively replaced the Skill of Craft process with a new work system that requires a "Crosscutting Integrated Work Document" for repetitive, non-complex, low hazard activities. The Crosscutting IWD must be approved by division leaders or their designees and must address activity hazards and controls inherent in the work activity itself. Facility coordination and site-specific requirements/controls are now established through new "Form 1692."

Occurrence Report: ALO-LA-LANL-HRL-2003-0001

DISCUSSION: In the May 8, 2003 incident, the carpenter was tasked with installing four hasps on two refrigerator/freezers under a Skill of Craft-category work ticket. The subcontractor supervisory staff made the Skill of Craft determination for this task. The carpenter installed three hasps without incident. During installation of the fourth hasp, he created a spark when the self-tapping screw he was driving with a double-insulated cordless drill struck the refrigerator's side-panel wiring, tripping the electrical breaker and Ground Fault Circuit Interrupter. Wiring diagrams were not available for the refrigerator, which was left energized because the hazard analysis performed by the subcontractor did not adequately consider energized equipment in this Skill of Craft task hazard analysis. The employee was wearing the proper Personal Protective Equipment, consisting of safety glasses and dielectric gloves. Investigators were told that other hasp installations had previously been performed at the Facility under the same conditions without incident. An Activity Hazard Analysis was not completed prior to the work because the task was incorrectly performed under the Skill of Craft categorization.

IDENTIFIER: HRL-2004-0007

Refrigerator/freezer and the hasps installed by carpenter

ACTION/ RECOMMENDATION: Investigators determined that the direct cause of this incident is that work should not have been performed on energized equipment. The root cause was identified as a deficiency in work organization/planning because the task was incorrectly performed as Skill of Craft. Investigators noted that while there are rare circumstances when it is acceptable to modify appliances after review and approval by an ESO, it is not an acceptable practice if an alternate listed electrical appliance that satisfies the need is available on the market. Furthermore, investigators stressed that if listed electrical equipment is modified, it may no longer be considered listed. In this case, refrigerator/freezers with locks were available and should have been purchased instead of opting for modification without ESO review and approval.

Relating to the incorrect SOC determination, investigators stressed that the installation of hasps, or any modification of electrical structure component housing, was not authorized at LANL under SOC controls. In addition, investigators said that the subcontractor's procedures for approved electrical work require that the approved work be performed on de-energized equipment through an AHA, Standard Operating Procedure or special electrical work permit. Had an approved modification been reviewed and approved by an ESO, an Activity Hazard Analysis would have identified the hazards of working on energized equipment and would have required a lockout/tagout before the work could begin.

With the issuance of "Notice 142," SOC activities are now performed as routine maintenance work that requires the completion of a crosscutting IWD that addresses hazards and controls inherent to the work, and the IWD must have approval of the division director or his designee. The responsible division leader for the facility where the work is to be performed must establish facility coordination and site-specific requirements and controls using Form 1692. Subcontractor personnel are required to check in at facilities, validate that Form 1692 has identified all the site hazards, and that the IWD is appropriate for the task. If discrepancies are found, the work must not be started until the IWD is reviewed and re-processed in accordance with Notice 142.

REFERENCES:

- Notice 142, **Integrated Work Management –Interim Process**
- ESH Form 1692, **"ESH Site Hazard and Control Form"**
- LIR402-600-01.3, **Electrical Safety**
- LIG 402-600-01.2, **Electrical Safety Implementation Guide**
- LIR 230-03-01.5 **Facility Management Work Control**
- **KSL Electrical Safety Program AP-12-25-001**
- **KSL Lesson Learned Bulletin 03-014**

EDITOR'S NOTE: This page features a Lessons Learned document selected from the LANL complex. This quarter's selection is from the Los Alamos Neutron Science Center (LANSCE).

LANSCE

Lessons Learned

RENTAL HOIST WITH SAFETY DEFICIENCIES

WHAT HAPPENED?

Figure 1

February 19, 2004 during a routine safety walkaround, a LANSCE-10 ES&H Team member discovered a portable hoist (Figure 1) that had been delivered to Building 18. While examining the portable hoist (ROUST-A-BOUT by Sumner Manufacturing Co.) some deficiencies in the equipment were discovered.

First, there was not an inspection sticker or documentation indicating the latest inspection. The equipment had been sent to TA-60 for KSL inspection prior to delivery to TA-53. Second, the hoist did not appear to be in a good working condition as evidenced by the rusty condition of equipment parts (Figure 2). Third, the steel pin in the shackle had been replaced with a bolt not rated for supporting a load (Figure 3). This pin is weight rated based on the load limit. This hoist has a load limit of 1000lbs or 1500lbs depending upon the lift configuration. Fourth, the operator's manual had been exposed to the natural elements and was not readable. The document was brittle and broke into pieces when removed from the protective container attached to the equipment. Without this document, the operator does not have information about the load limits for specific lift configurations. Due to these deficiencies this hoist was returned to the supplier and the supplier was asked to correct the deficiencies.

In April, the equipment was requested again. The same piece of equipment was delivered with the identical discrepancies as noted in February. Since the supplier had not addressed the safety deficiencies, the equipment requestor was instructed to not use the equipment. KSL was notified of the deficiencies and was asked to perform an on-site inspection of the equipment. KSL inspected the equipment, agreed to the safety deficiencies, and concurred with LANSCE to return the equipment to the supplier. KSL also agreed to implement a process for inspecting rental equipment to prevent a reoccurrence of this nature.

LANSCE Lessons Learned
Carl Morgan and Melissa Metcalf

April 2004

ACTIONS:

Figure 2

February

1. The individual who ordered this piece of equipment was contacted and informed of the safety concerns associated with the hoist.
2. The LANSCE Safety Officer was contacted and the findings were entered into the Management Walkaround (MWA) System. MWA action was assigned to SUP and PS-1 was notified.
3. The hoist was returned to the supplier without being used.

April

1. The individual who ordered this piece of equipment was contacted and informed of the safety concerns associated with the hoist. Notifications were also made to FWO-LANSCE, KSL, SUP-1, PS-1 and HSR-5.
2. KSL was contacted regarding TA-60 inspection. An on-site inspection of the equipment was requested from KSL.
3. Following the inspection the equipment was removed from TA-53 and returned to the supplier.

LESSONS LEARNED:

Figure 3

1. This equipment was delivered to TA-53 following a TA-60 inspection by KSL. The KSL inspection was a verification the delivered equipment was the equipment ordered by TA-53. Employees at TA-53 interpreted “inspection” to mean the equipment was safe for use upon delivery. Based on this miscommunication, KSL is going to develop a process for performing inspections of rental equipment. This will include providing an inspection report with the rental equipment when delivered to user.
2. When rental equipment is delivered, it should be inspected by the user prior to first use. This inspection should include the user reading and understanding the rental equipment’s Operators Manual.

LANSCE Lessons Learned
Carl Morgan and Melissa Metcalf

April 2004

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